

The History of the Conservation Movement in Missouri



COMMEMORATIVE ISSUE

Conservation Education Series

A Program of the Missouri Department of Conservation

The Missouri Department of Conservation

The Conservation Commission is by law, the head of the Department of Conservation, which is responsible for the control, management, restoration and conservation of all wildlife and forest resources of Missouri. The Commission appoints the Director, sets Department policy and approves budgets, regulations and real estate transactions.

The Department was created by an amendment to the Missouri State Constitution. The four Commissioners are appointed by the Governor of the state for staggered terms of six years and must be confirmed by the State Senate. No more than two may be from the same political party. The Department is free of partisan politics and is widely considered a model conservation agency. The Department is financed primarily from the sale of hunting and fishing permits and a 1/8 of 1% sales tax voted by the citizens of Missouri in 1976 to implement expanded conservation programs in the years ahead. The Department also receives federal aid funds from several agencies. Collectively, all funding sources support the broad-based programs of the Department, a state agency dedicated to public service and conservation.

As one of the fourteen departments of the state government, the Conservation Department undergoes the same budgetary appropriation process and accounting and purchasing procedures as do other state agencies. Also, the Department is annually audited by the State Auditor as requested in 1977 by the Conservation Commission.

The Department has divisions responsible for Fisheries, Forestry, Wildlife and Protection programs. Other organizational units are responsible for Conservation Education, Engineering, Fiscal, Public Affairs, Natural History, Operations, Outdoor Skills Education, Personnel and Planning functions.

Instructional Unit

The History of the Conservation Movement in Missouri

COMMEMORATIVE ISSUE

By

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**Missouri Department of Conservation
Conservation Education Unit
Education Section**

Murals depicting Missouri's conservation history are located at Department headquarters in Jefferson City. Photographs of segments of the murals are shown on the cover of this publication. The murals were painted by Charles Schwartz who, in his 40 years of employment with the Department, served as biologist, author, wildlife photographer and artist.



**50 YEARS of
CONSERVATION**
1937 • 1987

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Conservation Education Series

Conservation education encompasses all the activities and experiences which result in learning about people's dependency upon and use of natural resources to satisfy their needs and wants. Since 1941, the Missouri Department of Conservation has supported a *formal education program* through Missouri's public and non-public schools. This formal education program is being expanded with the development of the *Conservation Education Series*. The series will include instructional units designed to aid teachers in their efforts to integrate conservation concepts into appropriate junior and senior high school curricular areas.

The development of the *Conservation Education Series* is a formidable challenge involving many individuals. We are indebted to Director Larry R. Gale and Assistant Director Allen Brohn for their support and encouragement. We are also indebted to Donald K. Heard, superintendent of education, and Al Palladino, assistant superintendent of conservation education, for their guidance and assistance.

This series would not be possible without the contribution of each instructional unit's author and artist. Thanks to Elaine Callaway, conservation education consultant, and Cathy Schwaller, curriculum specialist, for their editing and production efforts.

The *Conservation Education Series* is dedicated to the Department's conservation education consultants, past and present. This small group of men and women have recognized education as a vital and important force in resource conservation . . . and have accepted the challenge. The conservation challenge should concern all of us, but especially those charged with educating today's youth. We hope this series will aid Missouri teachers in meeting this challenge.

For additional information on conservation education programs, write the Education Section, Missouri Department of Conservation, P.O. Box 180, Jefferson City, MO 65102.

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How to Use this Instructional Unit

The History of the Conservation Movement in Missouri Instructional Unit is designed to help teachers familiarize their students with the evolution of fish, forest and wildlife management and conservation in Missouri. This unit provides a brief history of how the need for management arose in Missouri, as well as the development of the Department of Conservation itself.

The lesson plans, accompanied by suggested teaching methods, activities, and audio-visual aids, are designed for use with junior and senior high school students, and should be modified in content to meet the needs of students, class, and teaching objectives. In addition, a sample unit test, a glossary, and a bibliography are provided. Transparency masters and puzzles are included in the appendix for reproduction as student handouts.

The unit addresses the following Basic Essential Skills Test (BEST) objectives:

Reading/Language Arts #5, 12, 13, 14, 15, 16, 17, 21

Mathematics #8

Government/Economics #4, 5

Material in this instructional unit may be reproduced if credit is given to the Missouri Department of Conservation. The test may be used in its entirety or individual questions may be lifted or revised for use in a more comprehensive unit. Pages marked "Student Handout" may be reproduced and distributed as printed.

Topic Outline

I. Introduction

II. Development of wildlife management in Missouri: 1700-1935

- A. Missouri—land of opportunity
 - 1. It was the great American “edge”
 - 2. It was home to diverse and abundant wildlife
 - 3. It held great attraction for early explorers
- B. Market hunting era
 - 1. Game and fish were greatly over harvested
 - 2. Land use practices changed
- C. Sportsmen become concerned about dwindling resources
 - 1. First statewide game law was passed in 1874
 - 2. Act to Prevent the Destruction of Fish was passed in 1874
 - 3. Office of State Fish Commissioner was established in 1878
 - 4. Walmsley Law was passed in 1905 and 1909
 - 5. First state game farm was established in 1910
- D. Wildlife populations decline in spite of management efforts

III. Era of reform: 1935-1940

- A. Federation of Missouri Sportsmen established two objectives
 - 1. Separate fish and game laws from politics
 - 2. Form a Conservation Commission
- B. Proposition No. 4 was passed in 1936
 - 1. It authorized formation of the Conservation Commission
 - 2. It separated the Missouri Department of Conservation from political control of the legislature
- C. The Pittman–Robertson Law placed a 10 percent federal excise tax on sporting arms and ammunition
- D. Cooperative Wildlife Research Unit was established in 1937
- E. MDC Forestry Section was established
- F. Statewide survey of game and furbearers was made in 1937
- G. *Wildlife and Forestry Code for Missouri* was first issued in 1940

IV. Three decades of restoration and growth: 1941-1976

- A. New management techniques were put into practice
- B. The State Forestry Act was passed in 1946
- C. The Dingell-Johnson Law was passed in 1950
- D. Game refuges and preserves were established
- F. Tax supported conservation initiated
 - 1. The Missouri Conservation Program Report resulted in the “Design for Conservation” three part program
 - a. More land was to be acquired
 - b. Public services were to be expanded
 - c. Research and development were to be increased
 - 2. Amendment No. 2 establishing the 1/10 of one percent state parks and soil conservation tax was passed in 1984

V. Summary

Introduction



The History of the Conservation Movement in Missouri is an account of how Missourians have used, abused, restored and managed their wildlife, fish and forest resources. This instructional unit traces the evolution of a conservation movement initiated by sportsmen, hunters and fishermen concerned for the protection of fish and game.

To some extent, Missouri's story parallels broad changes in American values. Historically, people have expressed a wide range of attitudes toward wildlife. The survival of native Americans and early settlers was largely dependent upon wildlife. As settlement continued and human numbers increased, wildlife was exploited and sold commercially. Fish, wildlife and forests were over harvested and largely depleted, resulting in enactment of protective laws, but with little or no provision for enforcement.

In detail this story is uniquely Missourian. What happened here was the product of the social, economic, and political history of the state, plus the regard which Missourians developed toward the diverse and beautiful land in which they lived.

This instructional unit reminds us that historically no other state has been able to match Missouri in the dedication of sales-tax funds for the conservation of fish, wildlife, and forests and, more recently, for soil and parks. Missourians continue to set precedents in their earnest support for conservation of their state's precious natural resources.

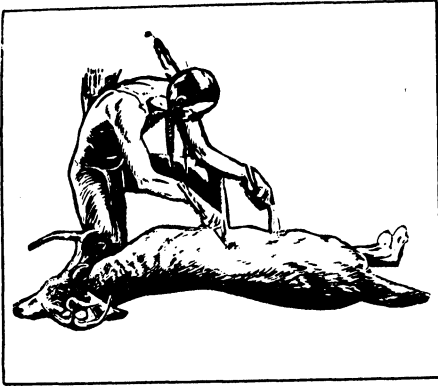
Objectives of Unit

The general objectives of this instructional unit are that each student should be able to:

1. Name two reasons why early explorers came to Missouri.
2. Discuss how attitudes concerning fish, forests and wildlife have changed since the eighteenth and nineteenth centuries.
3. Name three animals that were extirpated and three that have been restored to the state since 1700.
4. Identify two purposes of Proposition No. 4.
5. Discuss the role the Conservation Federation of Missouri has played in the development and support of conservation ideals in Missouri.
6. Identify the three goals of the Design for Conservation program.
7. Identify the three major areas of resource responsibility of the Missouri Department of Conservation.

Refer to individual lesson plans for more specific objectives.

Development of Wildlife Management in Missouri: 1700 to 1935



Missouri has been described as the great American "edge" because of the overlapping of geographical characteristics.

Before the arrival of white men, Indians thrived on the abundance of fish and game found in the territory that is now Missouri. Even the first explorers—French trappers, traders and miners—recognized the overwhelming diversity and abundance of Missouri's wild animals.

Missouri was a diverse ecological crossroads. Here, millions of acres of eastern hardwood and southern pine forests met. The forested Ozark mountains separated southeastern cypress swamps from western grasslands. The great Missouri and Mississippi rivers, along with their many tributaries, vast wetlands and rich lowlands, added even greater variety. With this overlapping of geographic characteristics, Missouri was the great American "edge."

These varied ecosystems were inhabited by an abundant variety of wildlife, both terrestrial and aquatic. Prairies, forests, wetlands, and rivers furnished food and shelter for many species including American bison, elk, black bear, white-tailed deer, timber wolves, mountain lions, raccoons, muskrats, otters, gray and fox squirrels, and red and gray foxes. Passenger pigeons, prairie chickens, wild turkeys, waterfowl, owls, eagles, hawks, and many species of fish were members of diverse wildlife communities.

This abundance of wildlife lured explorers and settlers to Missouri during the eighteenth and nineteenth centuries. The prevailing attitude was that the rich supply of wildlife (which provided clothing, barter, and a cheap source of food) could not be exhausted. Game and fish were killed for meat, furbearers were trapped and taken for their pelts, and predatory animals were exterminated for sport or to protect livestock and out of misplaced fear for human life.

Market hunting (the large scale taking of game for sale) was an accepted practice during the latter part of this era. Skilled marksmen and trappers relied upon market hunting as their source of income. By over harvesting—bringing population numbers below that which could be replenished by reproduction—they hastened the decline of the passenger pigeon, deer, wild turkey, ruffed grouse, and prairie chicken.

Fish populations were also affected by over harvesting. Commercial fishermen and citizens alike took fish in excessive numbers with no regard for spawning seasons or numbers taken. Catfish were heavily exploited as a food fish, and lake sturgeon and paddlefish were harvested primarily for their roe (eggs) which was made into caviar.

Fish were frequently taken by seining or through the use of natural or manmade fish traps. These traps were located where streams became narrow or shallow just below deeper pools. Fish were able to move into the pools during high water and were





Sportsmen's clubs were largely responsible for the passage of early wildlife laws.

trapped when the water receded. They were easily caught, usually by hand or by seining the pool. Manmade fish traps were constructed by making side chutes or dikes (similar to beaver dams) out of tree limbs, mud and rocks.

The unrestricted harvesting of game and fish certainly took its toll. However, the massive destruction of essential habitat brought on by the clearing of natural vegetation and changing land use was imminently more significant in the decline of fish and wildlife.

By 1830, culture centered around farming as well as harvesting of fish and wildlife. Agricultural activity, lumbering, channelization of streams and rivers and industrial development greatly diminished the quality and quantity of wildlife habitat. Soil erosion became a major problem as virgin forests disappeared from the land. In the Ozarks, the last major stand of pines was cut. In southeast Missouri, wetlands containing century-old cypress trees were drained and cleared. Once pure waterways became increasingly contaminated with silt, raw sewage and industrial waste, threatening aquatic wildlife.

In less than a hundred years (1850-1930), the American bison, timber wolf, and passenger pigeon were extirpated from the state. The last remaining concentration of elk was killed by market-hunting Indians in Holt County in 1840. Other wildlife species were still present in 1930, but only in greatly reduced numbers: deer, turkey, squirrel, muskrat, beaver, mink, raccoon, bobcat, mountain lion, prairie chicken, otter, badger, Eskimo curlew, whooping crane, trumpeter and whistling swans, and lake sturgeon and paddlefish.

A growing controversy over market hunting surfaced as the volume of game sold in cities increased and fish and wildlife populations dwindled. Commercialization of fish and wildlife was blamed for the decline in wildlife numbers. Hunters and fishermen were beginning to divide themselves into two opposing groups—the market hunters and commercial fishermen who made their living by selling wildlife versus the sportsmen who hunted and fished for recreation. A deep conflict arose between these two groups.

Among those expressing concern about dwindling fish and wildlife resources, none were more active or vocal than the sportsmen and wildlife enthusiasts. Their efforts were evidenced in 1851 when the state's first game law was enacted. Although it applied only to St. Louis County, it marked the beginning of continued efforts by sportsmen's clubs to prompt legislation for the protection of wildlife. Ten years later, in 1861, a law was enacted to prevent obstruction of streams by dams, seines, and nets, in an effort to protect Missouri fish from commercial fishermen.

Through public pressure, mostly from influential sportsmen, Missouri's legislature passed the first *statewide* game law on February 7, 1874. Titled "An Act for the Preservation of Game,

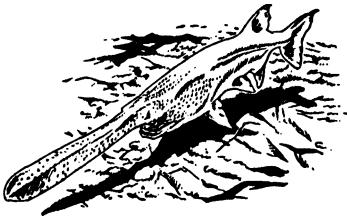
Missouri's first statewide game law was passed in 1874.

Animals and Birds," this law established seasons for a few game species and prohibited the selling and purchasing of wildlife not in season. The responsibility for enforcement was assigned to the constables, market-masters, and police officers. A Missouri court declared that the state had as much right to preserve its wildlife as it had to preserve the health of its citizens, thus upholding the viewpoint of conservation proponents.

The passage of the 1874 game law appeared to be a result of a gathering controversy over market hunting. The "Act to Prevent the Destruction of Fish," passed the same year, sought to prohibit some wholesale fishing methods. It banned the use of drugs, explosives, "*or other such means to catch fish in any waters of the state.*" It also declared the free passage of fish must not be obstructed by nets, dams or other devices, excepting dams built for navigation or power.

Unfortunately, many did not obey the new laws, and market hunting sympathizers and wholesalers were still very influential. The few attempts made to enforce the 1874 laws were unsuccessful and, for the next 30 years, market hunting continued at a feverish pitch. Records reveal that in 1878 a St. Louis game market offered the following selection: prairie chickens and ruffed grouse, \$2.75-\$3.00 per dozen; quail, 78-85 cents per dozen; rabbits, 70-80 cents per dozen; squirrel, 30-40 cents per dozen; ducks, \$1.50-\$2.00 per dozen; pigeons, 10-15 cents per dozen; deer and turkey, 5-6 cents per pound; and opossum, 5-15 cents each.

St. Louis was established as the largest game market in the U.S. in 1885.



Conservationists continued to apply pressure. In 1878, the legislature created the office of State Fish Commissioner and appropriated \$1,000 for his use in distributing fishes available for stocking purposes through the federal fish commission. In 1879, the state agency was expanded to a three-man commission which was given authority to establish a fish hatchery. The Commission completed the state's first fish hatchery at St. Joseph in 1881, and a second hatchery was acquired when the city of St. Louis granted a long-term lease on nine ponds in Forest Park two years later.

In 1885, the State Fish Commission identified St. Louis as the largest game market in the United States. Pointing to this fact, they recommended the formation of a Fish and Game Commission to preside as an authority over the regulation and protection of both fish and wildlife; however, this recommendation was not acted upon until 1905.

In 1895, the Missouri legislature passed a law which established the office of Game and Fish Warden, but year after year this official was left powerless and virtually without funds and assistance. In 1901, a law was passed making it illegal to export wild game, but again, the law provided no practical means of enforcement. Two years later, lawmakers completely abolished the office of Game and Fish Warden.



The first state game farm was established in 1910.

In 1904, when the World's Fair was held in St. Louis, new records for the illegal sale of wildlife were set by game dealers. According to the Bureau of Labor Statistics report for that year, 3,999,516 pounds of game were sold in Missouri. Though this was in violation of the law at the time, enforcement was non-existent; not a single person was apprehended for selling wildlife.

By 1905, Missouri culture was centered around farming, mining, industry, and manufacturing. Sport hunters and fishermen, who now greatly outnumbered the market hunters and commercial fishermen, influenced lawmakers to pass an up-to-date game law known as the Walmsley Law. The new law authorized the sale of hunting and fishing licenses to the public and provided a "game protection fund" of \$50,000 to pay the salaries and expenses of a staff of game wardens. It established open and closed seasons for most of the game species and furbearers, provided for protection of non-game birds, and vested ownership of wildlife to the state. Perhaps most important of all, it contained strict provisions eliminating the sale and commercial transportation of game, in effect calling a legal halt to the lucrative game trade.

Unfortunately, the new law was perhaps too progressive for the time. The market hunters, commercial fishermen, and many rural people were shocked and outraged. The Missouri Country Produce Dealers League declared open war on the law and succeeded in electing a legislature that favored commercial hunting and fishing interests. The result was a total revision of the Walmsley Law by removing most provisions aimed at wildlife conservation and enforcement.

The effect of the preposterous 1907 law was to again throw the state wide open to market hunting and fishing, and to illegal methods of all kinds. The law was soon disregarded and ridiculed as a legislative joke. Fish and game lawlessness prevailed for the next two years.

Public revulsion over this lawlessness finally resulted in the 1909 legislature restoring most of the best features of the original Walmsley Law and adding some improvements of its own. The 1909 Law changed the title of the state warden to "State Game and Fish Commissioner" and channeled license revenues into the game protection fund. The new Game and Fish Department withstood additional attacks by commercial interests in 1911, and managed to survive the ensuing political battle intact.

When closed seasons and bag limits failed to check the steady decline of game populations, Missouri followed the lead of other states in taking the next obvious step. A state game farm was established at Jefferson City in 1910. Early propagation (pen rearing of wildlife) and restocking programs were entered enthusiastically and touted as a panacea. Little or no thought was given to the need for habitat restoration for fish and wildlife. The importance of habitat was a concept foreign to wildlife management at this time.

The 1909 Law remained the basis of Missouri's fish and game laws until 1936, although almost every session of the legislature resulted in some minor revisions. One such change was the diversion of five percent of the total receipts of the Game and Fish Department to a State Park Fund for the purpose of purchasing, improving, and maintaining suitable lands for public parks. The purpose of the State Park Fund Act was to acquire a large well-watered tract of land particularly adapted to game and fish where the work of propagation and protection could be carried out under the most favorable conditions.

While the area to be acquired was termed a park, its proposed management more correctly fit what we would now designate a wildlife management area. With money thus provided, many of the areas now included in the State Park system were acquired during the 1920s. With a few exceptions, most of the parks remained relatively undeveloped until public works grants and the Civilian Conservation Corps made funds and manpower available for roads, buildings, and other construction during the first Franklin D. Roosevelt administration (1933-37).

Following the first World War, new game farms were added, some state-owned, some privately operated under contract or leased by the state. In 1925, 25 percent of the game department's revenue was appropriated for the State Park system.

The decade from 1925-1935 witnessed the most ambitious restocking efforts in Missouri fish and game history. In an effort to make the fish and wildlife populations keep pace with the march of increasing human population, the Fish and Game Department had 18 parks or refuges involved in propagating deer, wild turkey, pheasants, and quail. This decade could also be considered the golden age of hatcheries in Missouri. In 1927, Bennett Spring Hatchery was acquired for trout production, and several other areas were added in 1929.

As the years passed, it became obvious to more and more discerning citizens that something beyond protection and artificial restocking would be necessary to restore fish and wildlife. Certain college biologists with an interest in wildlife, and articulate lay conservationists began to chafe at the failure of such measures. In 1930, the Game and Fish Commissioner claimed that the answer to declining fish and wildlife populations was not propagation, but the provision of food, cover, and protection.

Then came the drought years of the 1930s—beginning in 1933 and continuing through 1936—to climax the long years of exploitation and neglect. Once abundant quail populations were cut down to scattered remnants. Famous Ozark bass streams were reduced to mere trickles. In the Ozark woodlands, fires raged across the parched hills all year long. Indeed, the prolonged, withering drought which brought ominous dust clouds from Kansas and Oklahoma and threatened forests and most forms of wildlife, aroused public interest in conservation. The Dust Bowl



In 1930, the Game and Fish Commissioner claimed that the answer to declining fish and wildlife populations was provision of food, cover, and protection.

era proved to be an alarming climax to years of forest and land abuse and neglect.

While Missouri's ineffectual Game and Fish Department couldn't be blamed for the weather, it was totally unequipped to come to grips with the situation. Staffed entirely with employees whose only qualification for appointment was that they secured the endorsement of the proper political party leaders, the department could not provide a plan or leadership for restoration. A complete turnover of personnel was expected every four years when the incoming governor filled the jobs with his own patronage. Further, the department lacked the legal power to close seasons or reduce bag limits to meet crises in game populations.

Era of Reform: 1935-1940

A statewide campaign organization, the Restoration and Conservation Federation of Missouri, was formed in 1935.

Despite game laws, which were enforced to varying degrees, and massive restocking efforts, terrestrial and aquatic wildlife populations steadily declined. The mid-1930s witnessed a growing dissatisfaction with the politically run Fish and Game Department.

Roland M. Hoerr, president of the Missouri Duck Hunter's Association, initiated a new era when, in April, 1935, he wrote a letter to Tennessee conservation leader Nash Buckingham, asking directions for forming a statewide campaign organization. First called the Federation of Missouri Sportsmen, and later titled the Restoration and Conservation Federation of Missouri, the organization is known today simply as the Conservation Federation of Missouri.

Two primary objectives were established by the organization: first, to separate fish and game from politics; and second, to establish a Conservation Commission with adequate authority for the "control, management, restoration, conservation, and regulation of all wildlife, fish and forestry resources of the state." Provisions for the state park system were not included, an omission reflecting sportsmen's resentment at having their license dollars spent on something other than fish and game restoration.

The Federation decided that sponsoring a constitutional amendment via the initiative petition and referendum process was the most effective means to accomplish their objectives. With a barrage of publicity, the group took its petition directly to the public in time for the 1936 general election. Endorsements were solicited from many organizations, including the American Legion, Veterans of Foreign Wars, Farm Bureau, Federation of Women's Clubs, garden clubs, and the chambers of commerce of St. Louis, Kansas City, Springfield, and other cities.

Slogans such as "Save Wildlife! Vote Yes, Scratch No, on Proposition No. 4" and "Bring 'em Back to Missouri" appeared on bumper stickers, printed cafe napkins, newspaper advertisements, billboards, and countless leaflets throughout the state. A special film entitled *It Can Be Done* was distributed in theaters throughout the state.



Opposition to the “*Bring ‘em Back to Missouri*” movement existed primarily in rural areas, specifically among rural sportsmen’s groups. These anti-regulation groups appealed to the farmers of Missouri for support in their battle against granting power to a “city sportsman’s commission.”

A significant point to remember is that 1936 was a time fraught with financial hardship for farmers across the nation. Known as the Great Depression or the Dust Bowl era, the ’30s brought drought, poverty, and hunger to these citizens. Farmers might easily have been antagonized when confronted with the desires of what they saw as an elite, city-sportsman organization which threatened their livelihood.

Fortunately, the Federation was astute enough to appreciate this attitude. They counterattacked anti-regulation publicity with the assurances and endorsements of such respected agricultural leaders as the presidents of the Missouri Farmers Association and the Missouri Farm Bureau. The campaign was successful, and on November 3, 1936, the proposed conservation amendment to the Constitution carried the state by a vote of 879,213 to 351,962 (a 71 percent majority).

Amendment No. 4 authorized the formation of a four-member, bipartisan Conservation Commission appointed by the governor.

Amendment No. 4 authorized the formation of a four-member, bipartisan Conservation Commission. Selected for their leadership ability and interest in conservation, they were appointed by the governor. The first Commission set the course for what has become one of the best wildlife agencies in the nation. They appointed Irwin T. Bode, chief extension biologist for the U.S. Biological Survey (today the United States Fish and Wildlife Service), as the first director.

The Commission adopted a policy outlining the new agency’s functions as follows:

1. Research, including investigation of the causes of wildlife depletion and the means of restoration.
2. Propagation (It was still a common belief that the way to increase fish and wildlife was with more and larger hatcheries.)
3. Enforcement
4. Forestry, including cooperation with and assistance to private timberland owners.
5. Public relations, particularly education and farmer participation in wildlife management.



Two additional occurrences affected conservation in Missouri in 1937 and continue to have an impact on conservation today. The first was the passage of the Pittman-Robertson Act which placed a 10 percent federal excise tax on sporting arms and ammunition, which is still in effect today. The money is returned to the states for research, for acquisition of game lands, and for development of game lands and game habitats. The second was the U.S. Bureau of Biological Survey (later the U.S. Fish and Wildlife Service) entering into an agreement with the Commission and the University of Missouri to establish a Cooperative Wildlife



In 1938, The Conservationist magazine was created as a voice for fish, forest, and wildlife management.

Research Unit at the University of Missouri. The purpose of the unit continues to be to train students in wildlife sciences and to provide sound information on which to base wildlife management plans.

Director Bode selected and organized the Department's staff, subject to the Commission's approval. Only professionals were hired for key positions. The official title for enforcement personnel was changed to Wildlife Conservation Agent in order to implement a transition from strictly a law enforcement officer (game warden) to a versatile representative of the Conservation Department. Applicants were selected on the basis of performance on a written examination and by rigid physical requirements.

In 1938, a forestry section of the Commission was established. Forest fire control in the state had previously been termed "impossible." About one-third of Missouri's forest are burned each year. A majority of the fires were intentionally started "to kill ticks and chiggers, to make better grass, to drive out varmints, and to get rid of brush." Under new direction, four fire protection districts were organized, five fire towers manned, and one million trees produced for cooperative planting with private landowners.

When the forestry section of the commission was first established, funds and manpower were in short supply. The program was aided by the Civilian Conservation Corps (C.C.C.). Members of the C.C.C. built towers, roads and fire trails, did timber stand improvement cutting, and planted millions of seedlings.

The Missouri Commission attempted to establish fire control in cooperation with private landowners. This called for extensive public awareness and education programs. When district foresters had time, they would call on farmers and landowners in an attempt to get signatures on "cooperative fire protection agreements." By the end of 1941, more than 1,600 landowners had signed the agreements. Their combined lands totaled 800,000 acres.

Also in 1938, a voice for wildlife and forest management was created by the Missouri Department of Conservation—a magazine called *The Conservationist*. Later, the Commission implemented a youth education organization called Nature Knights. The program promoted activities that helped provide food and cover for wildlife and instructed young people in the basic principles of wildlife management.

One of the most important tools available to the original Commission was the state-wide survey of game and furbearers published in April of 1937. Two prominent research biologists, Rudolf Bennitt and Werner Nagel, conducted the survey which furnished a comprehensive picture of wildlife conditions in Missouri.

The Wildlife and Forestry Code for Missouri was first issued in 1940.



Bennitt and Nagel's research proved vital for two reasons. First, it gathered basic, accurate data serving as a foundation for later research. Secondly, when combined with results of public hearings, it gave conservationists sufficient evidence to present a winning argument in their fight for the passage of regulations.

According to Bennitt and Nagel's survey, an estimated 1,800 deer and 2,500 wild turkeys were left in the state. Other species nearing depletion were prairie chicken, ruffed grouse, beaver, otter, badger, and raccoon. The 1940 *Wildlife and Forestry Code for Missouri* was issued in an effort to protect these dwindling populations.

Some Missourians considered the new code too drastic. They took issue with stringent provisions such as the elimination of established hunting seasons for raccoon, deer, and turkey, allowing those species total legal protection for as long as six years. The shortening of seasons which remained open and a reduction in bag limits further upset some people.

Fueled by a few legislators who resented losing control over the former Fish and Game Department, opponents of the code attempted to repeal Amendment No. 4. By this time, however, the Commission had become accustomed to dealing with criticism. They provided public information explaining the need for restoration, and when the McCawley Amendment to repeal Amendment No. 4 appeared on the ballot in 1940, it was defeated at the polls by a two-to-one margin. Once again, Missouri's citizens proved their willingness to endorse and vote for sound conservation policies.

At the close of the decade which had brought so many changes to the state, several achievements were prominent. The first was the separation of the Conservation Commission from politics. With bipartisan leadership guiding the organization, progress could not be disturbed by political conniving or favoritism.

A significant achievement was the initiation of a modern-day wildfire protection program. Five fire protection districts had been formed in the Ozarks with lookout towers erected on high points about 10 miles apart. This was the beginning of a successful endeavor to control forest fires on private land. A public education campaign was carried out by foresters and conservation agents to bring about a significant change of attitude in an attempt to prevent the deliberate burning of the forest.

Another achievement was the expansion of research, which had been given first priority when the early Commission created its five-part course of action. Under the tutelage of Drs. Aldo Leopold and William A. Albrecht, University of Missouri biologists searched for new perspectives in the study of wildlife management.

During the days of the old Fish and Game Department, propagation had been touted as the most viable management technique, despite its high cost and inefficiency. Research

The Missouri Conservation Commission can claim one of the first field programs in the nation based on the "wildlife-from-the-land" concept.

proved this false, revealing the value of habitat protection and introducing the "wildlife-from-the-land" concept which related soil fertility and land use to wildlife populations. Wildlife would repopulate well if provided proper habitat. This was a concept which could not be denied.

The Missouri Conservation Commission can claim one of the first field programs in the nation based on that concept. It was one of the first that had the courage and the facts to tell hunters and fishermen that most artificial propagation is ineffective, thus abandoning quail hatcheries and turkey farms.

"The only permanent way to increase wild game is to improve the environment," sportsmen were told. "If the land is suitable, or is made suitable, and if land use permits the existence of proper habitat, wild game will thrive; if these conditions do not prevail, no amount of artificial increase or stocking will improve populations." With this concept in mind, restocking was accomplished by live-trapping native animals in areas of relative abundance and redistributing them to unpopulated areas of suitable habitat.

Three Decades of Restoration and Growth: 1941-1976

The three decades following the establishment of the Conservation Commission witnessed the results of Missouri's initial conservation efforts.

The forestry program received a shot in the arm in 1946 when the legislature passed the State Forestry Act that reduced the annual taxes on areas classified by the Conservation Commission as forest croplands. After the timber harvest, the forest products were then subject to a graduated yield tax. The act also provided for increased fire and theft protection for participating landowners. "Grandma-ing" (timber stealing) was considered second only to fire in destruction of forests and limiting timber production.

The amount of forest acreage burned was greatly reduced. In 1955, with organized forest fire protection on 9.5 million of the 13 million acres requiring protection, the total acreage burned was 0.36 percent, the lowest ever recorded. This compares to over 30 percent every year during the 1930s.

Fisheries research was expanded in 1951 with the aid of federal funds provided by the Dingell-Johnson Law. Passed by Congress in 1950, this law was modeled after the successful Pittman-Robertson Act. Funds were derived from a federal excise tax on sport fishing tackle. The Dingell-Johnson funds could be expended for these general types of projects: (1) acquisition, (2) development, and (3) research.

The first project under this program was a broad investigative program including the continuation of a state-wide creel



The first statewide deer season since the turn of the century was opened in 1959.



census and inventory of the fisheries resource. Other projects included special stream population studies, growth-rate research in the White and Salt rivers, an investigation of the feasibility of rearing and stocking adult black bass, and an evaluation of the results of smallmouth bass restocking.

On the wildlife front, the revised management practices stressing habitat improvement and protection had replaced the propagation method and had already proved to be successful. Populations of deer, turkey, and beaver which had been near extirpation in 1936 were making remarkable recoveries.

In 1959, deer were abundant enough to open hunting season in all 114 counties of the state. This was the first state-wide deer season since the turn of the century. In 1960, spring turkey season was opened in 19 counties for the first time since the original Commission had closed legal hunting of that species in 1940.

No longer a fledgling organization the Missouri Department of Conservation had, by the mid-40s, achieved an indisputable credibility. Charged with the responsibility of maintaining Missouri's fish, wildlife, and forests, the Conservation Commission realized the future of these resources was intertwined with that of soil, water, and air. Mindful of this interdependence, the Commission allied themselves with agencies like the Agricultural Extension Service, the Missouri Department of Natural Resources, the Soil Conservation Service, the Production and Marketing Administration, and the U.S. Forest Service.

The years following the inception of the Department were years of steady growth due to the cooperation among all wildlife and land-use organizations and individuals in the state.

Research continued and focused on habits, productivity, limiting factors, habitat requirements, and population inventories of game species. Wildlife biologists were assigned a species or a group of subjects to ascertain the factors affecting each species. Although biologists became specialized in a particular subject area, they worked as a group and exchanged ideas regularly on the University of Missouri campus. Since the 1950s, research breakthroughs have been frequent and abundant.

Research was also conducted on non-game species such as bats and prairie chickens. Many non-game species also benefited as habitat was improved for game management.

A shift from the immediate management needs to an emphasis on the ecological and physiological relationships led to a broader look at Missouri's fish, wildlife, and forests. Researchers collected data relating wildlife populations and habitat to soil types. This information, along with watershed inventories, measurements of permanent water and forest cover, and the development of a field bag check of hunters, formed the basis for many of the management programs which followed.

Early land acquisition provided refuges and preserves for the protection and restoration of game species. Land purchases

for the development of waterfowl and hunting areas came about in the late 40s. In the 1960s tracts for upland game hunting areas were emphasized as an effort was made to provide public hunting areas throughout the state. But the land acquisition program was limited by a lack of sufficient funds as were other programs.

Several preliminary meetings between the Department and interested lay conservation leaders were held to determine the direction Missouri conservation should take in the future. Three nationally known conservationists and resource experts were called on to evaluate the programs of the Department of Conservation. The team included Dr. A. Starker Leopold of the University of California, Irvin K. Fox of the University of Wisconsin, and Charles H. Callison of The National Audubon Society. Their study resulted in the Missouri Conservation Program Report (MCPR).



In summary, the Missouri Conservation Program Report recommended a broadening of the existing Missouri Department of Conservation program. This was to be accomplished by adding conservation programs for non-game wildlife, managing for outdoor recreation outside the traditional realm of hunting and fishing, and increasing hunting and fishing areas and opportunities.

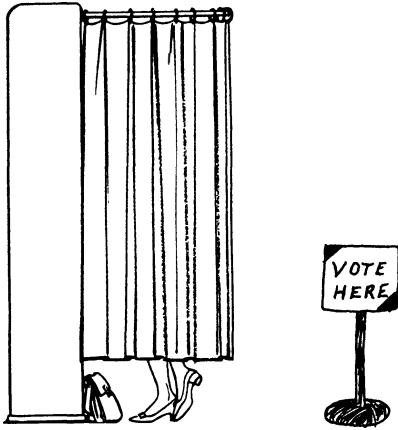
They suggested that to accomplish these objectives would require a source of funds beyond hunting and fishing permit fees, which was the primary source of revenue for the Missouri Department of Conservation. With the idea that funding could be found somewhere, the Conservation Department developed a long-range plan to provide a broader and more effective conservation program. This plan was called the *Design for Conservation*.

Under the auspices of the Conservation Federation of Missouri, the Citizens Committee for Conservation was formed to find a way to finance the Design endeavor. The Committee organized a petition drive to place a proposal for a soft drink tax on the ballot. This proposal was strongly opposed by soft drink bottlers. Two arduous years of petition drives were made futile in 1972 when the petition was ruled invalid by the state courts. Due to the lack of an "enacting clause," it was never placed on the state's general election ballot.

Despite discouragement over this setback, the Committee regrouped its forces and once again went to the public with an initiative petition and referendum drive. The second petition called for a one-eighth of one percent sales tax to finance the Design program. The Committee felt this proposal would appeal to a larger group of people than had the soft drink tax.

The sales tax proposal was quite revolutionary in that it was a constitutional amendment earmarking sales tax funds for conservation, thus maintaining the constitutional independence of the Conservation Department. In November of 1976, a record

The revolutionary "Design for Conservation" sales tax proposal was passed in November, 1976.



number of Missouri voters went to the polls. Amendment No. 1—the one-eighth cent conservation sales tax—passed by a 50.8 percent to 49.2 percent margin and became effective on July 1, 1977.

Success of the petition and referendum drive and tax proposal was due primarily to the effort of the Citizens' Committee and also to the timeliness of the movement. Nationwide, an awareness of environmental issues was strong. The National Environmental Policy Act of 1969 had been the first federal legislation to articulate this growing concern. An approaching Bicentennial also lent the Design proposal a certain timeliness. Missouri citizens realized that their outdoor heritage was threatened and was too important to allow further degradation.

A shared responsibility for the environment required programs which gave consideration to all citizens, not just hunters and fishermen. The Conservation Commission advocated, with the Design for Conservation program, an equitable balance of programs and expenditures so that all citizens might use and enjoy wildlife and the outdoors.

The Design for Conservation comprised a three-part program: first, a land-acquisition program; second, an expansion of public services; and third, an increase in research and development. The program was conceived with the intention of continuing to upgrade the fish, forest, and wildlife resources of the state. It has now been absorbed into the Missouri Department of Conservation's existing policies, procedures, programs, and budget.

Of the three parts of the program, land acquisition ranked first in priority and contained a dual purpose. It attempted to give Missourians an increased amount of land for public hunting, fishing, and nature enjoyment. It also called for the purchase of land holding special significance. Prairies, forests, wetlands, and natural areas which contained rare and endangered species of terrestrial and aquatic plants and animals were prime candidates for acquisition.



Public service, the second part of the Design for Conservation, included the expansion of existing programs and the creation of new ones. Additional personnel were added to provide the increased services. An immediate and major effort was made to provide technical assistance to private landowners to better manage their land for wildlife. Management of rare and endangered species, and non-game and urban wildlife also was made possible through the public service program and the creation of a Natural History section within the Conservation Department. Increasing the protection of special natural areas and upgrading information and law enforcement were major objectives of the public service endeavor.

Education programs were expanded to provide a variety of professional services and materials for teachers of students ranging in age from preschool through grade 12. Expansion of the Hunter Safety Program resulted in the development of the Outdoor Skills

education program which teaches Missourians of all ages how to use natural resources safely and ethically.

Since 1977, existing programs which emphasized basic research have been expanded as the third part of Design. There now are improved censuses of fish and wildlife and expanded statewide surveys of furbearers and game and non-game birds. Protected areas for endangered Indiana and gray bats and rare Niangua darters have been established, and restoration programs for wild turkeys, river otters, trumpeter swans, lake sturgeon, and other wildlife species have been initiated.

Today's natural resource concerns are not limited to Missouri's fish, wildlife, and forest resources. The growing awareness of the threat of soil erosion, coupled with anxiety over the deterioration of the state park system due to lack of funding, resulted in the passage of Amendment No. 2 in 1984. Amendment No. 2 provides for a 1/10 of one percent sales tax to be in effect for five years. Funds generated by this tax are divided equally between state parks and historic sites and soil conservation.

Summary



Missouri is one of the few states in which the Department of Conservation is divorced from political control by the state legislature.

From an era of commercial hunting and fishing to the wildlife, fisheries, and forest management techniques being applied today, Missourians have valued their natural environment and its resources. Those values have taken Missourians down a variety of pathways, some of them in the wrong direction. Looking back, we can be thankful that there were citizens who had the foresight to change directions and guide us onto a pathway which has led to a perpetuation of our natural heritage.

It was not a simple matter to bring about this change. It required dedication, commitment, research, and hard work to restore and conserve dwindling wildlife resources. It took great courage to turn away from the old methods of game farming to techniques involving habitat improvement and restocking from native wild populations. But the results have been successful.

Missouri is one of the few states in which the Department of Conservation is divorced from political control. Missourians have put the care of their wildlife, fish and forest resources into the hands of professional conservationists.

The conservation of natural resources task continues as we fight to prevent habitat destruction while researching and developing habitats for species still limited in abundance. The process of educating Missourians to wildlife needs began in 1937 and continues today.

Missourians have developed a well-earned pride for their land and its resources. They have repeatedly shown their willingness to support conservation efforts in their attitudes, which are reflected at the voting booth. Missouri now leads the nation in per capita expenditures for conservation.

All is not yet right for all species of Missouri's native flora and fauna resources, but by working together and utilizing management techniques based on sound ecological principles, Missourians can develop and use fish, forest, and wildlife for the enjoyment of *all* citizens. This is the goal of conservation. This is wise use of our natural resources. This is a commitment to conserving our unique natural heritage.

Lesson Plan No. 1

Title: Early History of Missouri Wildlife Management

Materials: Transparency of Conservation Successes Chronology (Appendix 1); overhead projector; film: "Our Wild Inheritance" (MDC Film Loan); 16mm projector and screen. (Film is also available on 1/2" VHS and 3/4" cassette.)

Objectives: After completing the lesson, the students should be able to:

1. List two reasons why Missouri was attractive to early explorers and settlers.
2. Define market hunting and describe its impact on wildlife populations.
3. Describe the role that sportsmen's clubs played in the enactment of the first game laws.
4. List the general provisions included in the Walmsley Act.

Method: Lecture, discussion, film

- Procedure:**
- I. Introduction
 - A. Show film "Our Wild Inheritance"
 - B. Distribute copies of Conservation Successes Chronology and use transparency as supplement to lecture
 - II. Presentation
 - A. Missouri's attributes attract explorers and settlers
 1. Missouri exhibits a cross section of geological types and wildlife species
 2. Attitude of settlers and explorers was one of believing that unlimited resources were there for the taking
 - B. Market hunting results in the over harvesting of game and fish
 1. Define market hunting
 2. St. Louis identified as largest game market in the United States
 - C. Wildlife populations decline
 1. Changing land use practices
 2. Expansion of human population
 3. Unrestricted use of game
 - D. Sportsmen's organizations push for legislation to protect wildlife
 1. First statewide game law—1874
 2. Office of State Fish Commissioner—1878
 3. Walmsley Act—1905 and 1909
 4. Game farms established

- E. Wildlife populations continue to decline in spite of management efforts
- III. Summary
 - A. Review Missouri's attraction to early settlers and explorers
 - B. Review the major laws passed in an attempt to protect fish and wildlife

Lesson Plan No. 2

Title: Era of Reform: The Development of Wildlife Management in Missouri

Materials: Film: "Guarding Our Living Environment" (MDC Film Loan); 16mm projector and screen (Film is also available on 1/2" VHS and 3/4" cassette); Wildlife Management Crossword (Appendix 2, 3, 4)

Objectives: After completing the lesson, the students should be able to:

1. List the two primary objectives established by the Federation of Missouri Sportsmen.
2. List the five major areas of concern of the newly established Conservation Commission.
3. Describe three major achievements accomplished by the Conservation Commission by 1940.

Method: Lecture, discussion, film

- Procedure:**
- I. Introduction
 - A. Show film "Guarding Our Living Environment"
 - II. Presentation
 - A. The mid-1930s witnessed a growing dissatisfaction with the politically run Fish and Game Department
 - B. The Federation of Missouri Sportsmen was established as statewide campaign organization, and sponsored a constitutional amendment via the petition process
 - C. Amendment No. 4 was passed in 1936
 1. It authorized formation of the Conservation Commission
 2. It separated the MDC from political control of the legislature
 - D. The Conservation Commission adopted a policy outlining five major areas of concern
 1. Research
 - a. The Cooperative Wildlife Research Unit was established to train students in wildlife sciences and wildlife management
 - b. Rudolf Bennitt and Werner Nagel conducted a statewide survey of game and furbearers in 1937
 2. Propagation
 3. Enforcement—the *Wildlife and Forestry Code for Missouri* was first issued in 1940 in an effort to protect dwindling wildlife populations

4. Forestry
 - a. The MDC Forestry Section was established in 1938
 - b. It attempted to establish fire control in cooperation with private landowners
 5. Public relations—in 1938, *The Conservationist* magazine was created as a voice for wildlife and forest management
 - E. The Pittman-Robertson Act, passed in 1937, placed a 10 percent federal excise tax on sporting arms and ammunition
 - F. The Missouri Conservation Commission can claim one of the first field programs in the nation based on the “wildlife-from-the-land” concept
- III. Summary
- A. The years between 1935 and 1940 witnessed an era of reform in wildlife management practices. Review the major accomplishments for these years.
 - B. Distribute copies of the Wildlife Management Crossword for independent completion.
 - C. Select a work of any Missouri writer, artist, poet, or musician that depicts the relationship of people to their environment, or in which the Missouri outdoors is an element. Write a brief essay analyzing the quality of that relationship.

Lesson Plan No. 3

Title: Three Decades of Restoration and Growth: 1941-1976

Materials: Transparency of Read A Tree (Appendix 5); overhead projector

Objectives: After completing the lesson, the students should be able to:

1. Identify the three major areas of resource responsibility of the Missouri Department of Conservation.
2. List the three goals of the Design for Conservation program.
3. Define preservation, restoration, and management.
4. Develop a time line of major events concerning wildlife management in Missouri.

Method: Lecture, discussion

- Procedure:**
- I. Introduction
 - A. The Missouri Department of Conservation is responsible for the conservation and management of fish, forests, and wildlife
 - II. Presentation
 - A. The three decades following the establishment of the Conservation Commission witnessed the results of Missouri's initial conservation efforts
 1. The State Forestry Act was passed in 1946
 - a. Reduced annual taxes on areas classified as forest croplands
 - b. Increased fire and theft protection for participating landowners

2. The Dingell-Johnson Law, passed in 1950, provided for a federal excise tax on sport fishing tackle
 3. Populations of deer, turkey, and beaver made remarkable comebacks
 4. Early land acquisition provided refuges and preserves for the protection and restoration of game species
 - B. The revolutionary “Design for Conservation” sales tax proposal was passed in November, 1976
 1. The three part program was conceived with the intention of continuing to upgrade the fish, forest, and wildlife resources of the state through:
 - a. Aggressive land acquisition programs
 - b. Expansion of public services
 - c. Increased research and development
 2. Missouri leads the nation in per capita expenditures for conservation
 - C. Missouri conservationists have found that there are five major steps in restoring and maintaining healthy fish, forest, and wildlife populations
 1. **Research** is studying the animal’s behavior and habitat requirements
 2. **Protection** means enforcing regulations concerning the harvesting of the animal
 3. **Preservation** means saving a resource by using it very little or not at all
 4. **Restoration** means trying to reestablish a wildlife population by live-trapping and redistributing the animals
 5. **Management** is maintaining and keeping the populations healthy
- III. Summary
- A. Distribute copies of “Read A Tree” and use transparency as supplement to review the major events of Missouri’s conservation movement from the 1700s to present.
 - B. Class project: a wildlife time line. Students use creative writing, art, research, and public speaking to present a history of wildlife management in Missouri. (The July, 1976 issue of *The Conservationist* is a good reference for this project.)

Glossary

Act for the Preservation of Game, Animals, and Birds:	A law passed in 1874 that established seasons for a few game species and prohibited the selling and purchasing of wildlife not in season.
Act to Prevent Destruction of Fish:	A law passed in 1874 to prohibit certain wholesale fishing methods such as drugs, fish berries, and explosives.
Amendment No. 4:	An amendment that authorized formation of a four-member, bipartisan Conservation Commission appointed by the governor.
artificial propagation:	The practice of pen rearing wildlife.
aquatic:	Growing or living in or upon water.
closed season:	The period of time during which the pursuit or taking of wildlife is prohibited.
commercial fisherman:	A person who harvests fish for profit.
conservation:	The wise use of natural resources.
creel census:	A canvass of anglers to gather data on their catches, time spent fishing, etc.
Dingell-Johnson Law:	A law passed in 1950 which imposed a federal excise tax on sport fishing tackle.
ecosystem:	The interacting system of a biological community and its nonliving environment.
edge:	The transitional zone where one cover type ends and another begins.
endangered species (native):	A species of native fish, wildlife or plant threatened with extinction because its habitat is threatened with destruction, drastic modification, or severe curtailment; or because of over-exploitation, disease, predation, or other factors. Its survival requires assistance.
extirpate:	The complete extermination or removal of an animal from a region or state.
furbearer:	A mammal sought for its fur. (In Missouri, the <i>Wildlife Code</i> defines furbearers as: mink, muskrat, opossum, otter, striped skunk, spotted skunk, badger, beaver, raccoon, weasel, red fox, gray fox, bobcat, and coyote.)

game animal:	An animal sought for its fur, feathers, flesh, or trophy value, and which is considered to possess those sporting qualities that enhance the hunt or angling experience.
game management:	The art of producing sustained annual crops of wild game animals.
game refuge:	An area designated for the protection of one or more species of game animals within which hunting and fishing is prohibited. Note: An area may be a refuge for one or more species, but be “open” for strictly controlled hunting or fishing of other species.
grandma-ing:	Timber stealing.
habitat:	The environment in which the life needs of an organism, population, or community are supplied.
market hunting:	The practice of killing game for profit.
natural resources:	The air, land, soil, water, plants, animals, minerals, sources of energy, and other persons upon which and whom man depends for his necessities, needs, and wants.
Nature Knights:	An educational youth organization that instructed young people in the basic principles of wildlife management.
non-game:	Those species of wildlife that may not be legally taken by hunting, fishing, or trapping.
Pittman-Robertson Act:	A law passed in 1937 that placed a 10 percent federal excise tax on sporting arms and ammunition.
population:	A group of organisms of the same kind.
predator:	An animal that lives by capturing and devouring other animals.
rare (species):	A species of organisms present in such small numbers that it could become endangered if its environmental conditions worsen.
restoration:	The process of restoring site conditions as they were before disturbance.
species:	A natural population or group of populations that transmit specific characteristics from parent to offspring. They are reproductively isolated from other populations with which they might breed.
State Forestry Act:	An act that reduced the annual taxes on areas classified by the Conservation Commission as forest croplands.
terrestrial:	Growing and/or living on land.

- Walmsley Act:** A law passed in 1905 that authorized the sale of hunting and fishing licenses, provided funds to pay the salaries and expenses of a staff of wardens, established seasons for game species, and vested ownership of wildlife to the state.
- wildlife:** Undomesticated animals, considered collectively.

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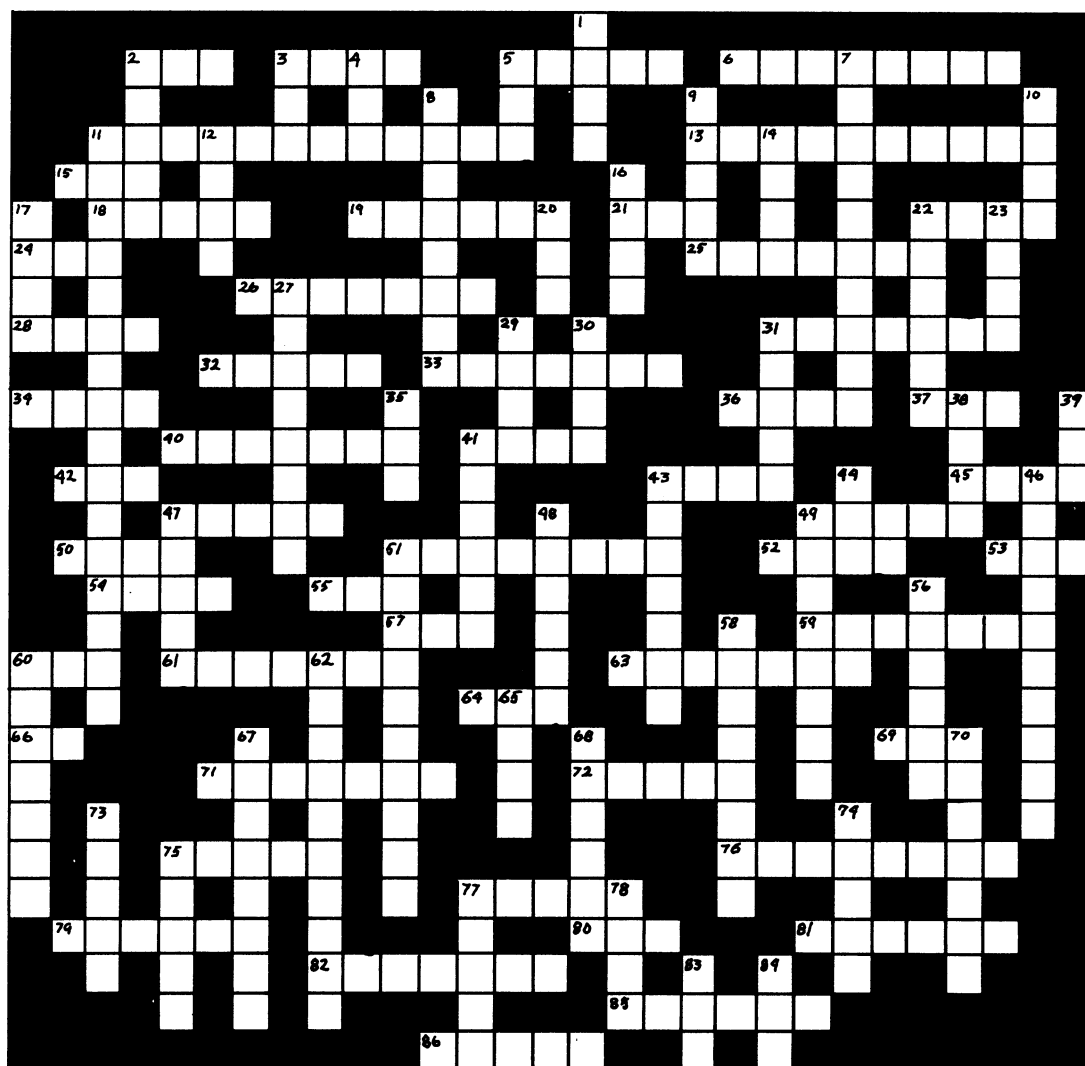
Conservation Successes Chronology

- Prior to 1673 Various Indian tribes established along Missouri's great rivers . . . 30 million acres of forest, 15 million acres of prairie . . . an abundance of wildlife
- 1782 Bald Eagle selected as National Symbol
- 1800 Start of a 50 year period of settlement that will result in the extermination or driving out of the larger species of animals important to pioneer economy
- 1840 Wild turkey considered "Too abundant to be worthy of mention."
- Mid 1800s Missouri deer herd estimated at over 700,000
- 1874 Legislature passes the first state-wide game law
- 1894 Beaver believed gone from north Missouri
- 1896 Last reliable record for the passenger pigeon in Missouri
- Early 1900s Giant Canada goose thought to be extinct in the U.S. except in a few isolated pockets such as along Missouri River, lower portion
..... Wood duck nearly extinct from over-hunting and habitat destruction
- 1905 Most wild turkeys gone from north Missouri
- 1915 Missouri's beaver essentially vanished
..... Wood duck considered a candidate for early extinction
- 1925 Deer population reduced to estimated 400 in 23 counties
..... Warren County has only turkeys north of Missouri River
- 1927 Deer, pheasant, and quail released in Missouri
..... Bluebird declared Missouri's state bird
- 1928 Two pairs of beavers released in tributary of Meramec River
- 1930 Decline of bluebirds noted during this decade
- 1935 An estimated 1,800 deer and 2,500 turkeys left in all of Missouri
- 1936 Proposition #4 passed, establishing bipartisan conservation commission
- 1937 Bennitt-Nagel survey of game and furbearers published; describes the status of Missouri's wildlife species and the problems facing the newly formed Conservation Commission
- 1938 Year-round closure of deer hunting statewide; to last for six years
..... Deer refuges established in south Missouri; trapping and restocking of deer to continue until 1958.
- 1939 Beaver live-trapped and moved to other Ozark streams
- 1941 Wood duck season reopened
..... Fewer than 2,000 Canada geese stopping in Missouri during their migration; first wintering population at Swan Lake numbered at 800
- 1942 Wood ducks found nesting in 32 counties, 13 fewer than in 1935; decrease due to destruction of nesting sites in tree cavities; nesting boxes introduced

- 1943Poaching declared “the most important direct factor limiting turkey increases today.”
 -Restocking with game-farm turkeys terminated; unsuccessful; further restocking limited to wild, live-trapped birds
- 1944Deer population estimated at 15,000 statewide
 -Deer season reopened in 20 south Missouri counties; bucks only
- 1945Bluebird decline hastened by the removal of old orchards and the conversion from wooden fence posts that provided nesting cavities, to steel posts
- 1948Species in greatest danger of extirpation (“extinction” within the state) are the otter, badger, turkey, prairie chicken and grouse; loss of habitat blamed; other species (deer, beaver, foxes and raccoons) making remarkable comebacks
- 1950Resident Canada goose population estimated at a few dozen
- 1951An open season on does established in 15 of the 32 counties open for deer hunting (the last any-deer season has been in 1908)
- 1952Only about 2,500 wild turkeys left in Missouri
 -Goose tubs experimented with at Trimble Wildlife Area; hoped that geese will nest in these
- 1953Modern trapping season for beaver reopened in 76 counties
- 1956Beaver trapping season open statewide
 -Wood duck season closed; partly due to habitat destruction
- 1957Deer season first opened to non-residents
- 1958Deer refuges opened to unlimited firearms deer hunting; later limited
 -First successful clutch of goslings at Trimble Wildlife Area; as a result, additional nesting flocks established at other areas
- 1959Deer season opened to all 114 counties
 -Wood duck season reopened
- 1960Turkey season opened for the first time since 1937; about 800 hunters bagged 94 birds
- 1961Missouri had the third largest eagle population in the 48-state area
 -Paddlefish population in the Mississippi River has declined 80-90 percent
- 1962Deer herds expanding well
 -Paddlefish successfully hatched and reared for the first time in hatchery facilities
- 1963Some 55,000 giant Canada geese accounted for on government and private lands in Canada and United States
- 1966Missouri’s eagle count taken in mid-winter totals 403
 -Swan Lake goose population grows to a peak of 138,000 birds
- 1968Archery deer hunting fastest growing hunting activity in the state
- 1970DDT linked to decline of the eagle and other predatory birds; habitat loss also cited

- 1972Paddlefish stocked in James River Arm of Table Rock Lake to test a possible solution to the loss of spawning areas flooded by Truman Dam
 The Mississippi Flyway flock of giant Canada geese has risen from near extinction to a total population of about 60,000
- 1973Turkey limit set at one per week during two-week spring season
- 1974Nesting wood ducks found in almost every county
- 1975First fall archery season for wild turkeys
 Nearly 200,000 geese counted at Swan Lake
- 1976Amendment No. 1 establishing the 1/8 of 1 percent conservation sales tax passed
- 1977Truman Dam blocks Osage River; most of Missouri's paddlefish trapped in Lake of the Ozarks; blocked from spawning grounds
- 1978Continued decrease in number of bluebirds noted
 Truman Reservoir stocked with paddlefish
- 1980Bluebird population estimated at 1/10 of that for 1935; extensive efforts to improve bluebird habitat and promote building and placing of bluebird houses
- 198154,033 deer harvested in Missouri; 314,602 permits issued; compared to 30,304 permits issued and 5,519 deer harvested in 1951
 9,293 turkeys harvested in Missouri; 32,199 permits issued; compared to 698 permits issued and 94 turkeys harvested in 1960
 241,500 ducks and 53,916 geese harvested
 4,707 beaver pelts sold
- 1982216 giant Canada geese stocked at 10 sites in Missouri; resident population estimated between 5,000 and 10,000
 First successful nesting in over 40 years of a pair of bald eagles at Truman Lake; one young eagle rehabilitated and released at Mingo Swamp
 56,041 deer taken during fall season
 17,744 turkeys harvested during spring season
- 1983Otters released into Lamine River at Otterville
 First ruffed grouse season in modern times in October in four central Missouri counties
- 1984Amendment No. 2 establishing the 1/10 of one percent state parks and soil conservation tax passed

Wildlife Management Crossword Puzzle



act	code	eroded	low	predator	space	Walmsley
age	cook	ethics	management	prey	species	waste
agent	cover	fat	market	raccoons	SPORT	water
air	coyote	feed	mink	range	St. Louis	weather
badger	cross	food	muskrat	rare	succession	wildlife
bag	death	fox	natality	rate	sun	
beaver	deer	fur	net	recreation	surplus	
bend	den	game	no	resource	survey	
biota	disease	habitat	nongame	run	tags	
bobcat	doe	harvest	nut	scent	tax	
camp	each	hunt	opossum	season	the	
carrying	ease	ice	otter	sets	track	
capacity	ecology	land	PAWS	sex	trapper	
cast	edge	law	permission	sign	trapping	
cat	endangered	legal	permits	skunk	use	
conservation	era	limiting	poach	soil	value	

Crossword Clues—Across**ACROSS**

2. Possession and _____ limits can make equal opportunities for all hunters.
3. Many people _____ birds in winter to enjoy them.
5. All wildlife need _____ or room to survive.
6. In the _____ Law, 1909, game funds first came from permit sales.
11. _____ is the wise use of natural resources so we will always have them.
13. Species threatened with extinction are placed on an _____ list.
15. A hibernating animal survives on stored _____.
18. Many animals spend their entire life without leaving a home _____.
19. The _____ is a large burrowing furbearer with long claws.
21. The first Missouri game law, 1874, was “An _____ for the Preservation of Game, Animals and Birds.”
22. Market hunters took large numbers of deer with _____ in the 1800s.
24. Eroding topsoil may pollute the _____ as well as the water.
25. One may _____ surplus game animals by hunting or trapping.
26. Early fur trade in the midwest was centered in _____.
28. An obvious sign of habitat destruction is _____ erosion.
31. There are 575 vertebrate _____ of wildlife in Missouri.
32. Ability to identify an animal _____ adds pleasure to wildlife users.
33. The relationships of organisms to their environment is called _____.
34. Captured animals may be marked with _____.
36. People who _____ and trap legally do not endanger wildlife species.
37. The _____ of a captured animal is usually noted for research purposes.
40. Legal harvesting reduces only a small part of total _____ wildlife.
41. Many who would not break laws feel they can _____ them a bit on bag limits.
42. Written legal control over specific animals is established by _____.
43. A long slender furbearer, like a large weasel, is the _____.
45. Students and researchers often _____ animal tracks with plaster.
47. Many animals outline their territory with _____ markings.
49. It is everyone’s responsibility to report those who _____ wildlife.
50. Most people who _____ out expect to observe wildlife.
51. Most valuable furbearers in Missouri, _____ have ringed tails and wear masks.
52. An animal that is caught and eaten by another animal is its _____.
53. Wildlife suffer most in winter during snow or _____ storms.
54. Many special recipes are available to _____ game.
55. Those who will have most influence on the future of wildlife are _____ landowners.
57. The dog or _____ is not classified as wildlife.

59. Nature may reduce wildlife through parasites and _____.
60. Berry and _____ producing areas attract many kinds of wildlife.
61. A good _____ must have enormous skill and information about furbearers.
63. The most important thing to help wildlife is to provide good _____.
64. Dentition or tooth wear may be used to determine the _____ of an animal.
66. Preservation means _____ use of wildlife.
69. Numbers of deer and turkey were very _____ before conservation began in Missouri.
71. Hunters contribute much money to conservation by buying _____.
72. A conservation _____ enforces wildlife laws.
75. An animal will usually not _____ territorial boundaries of that species.
76. The birth rate of a species is called _____.
77. All wildlife need _____ to survive and some need it for homes.
79. The largest Missouri rodent, _____ live on land and in water.
80. In 1976 a conservation sales _____ was passed to benefit wildlife management.
81. Human attitudes toward use of wildlife are determined by use of a _____.
82. The most common furbearer, the _____ is active at night.
85. 250 million tons of topsoil are _____ annually in Missouri.
86. Almost every wild animal in Missouri has some _____ protection.

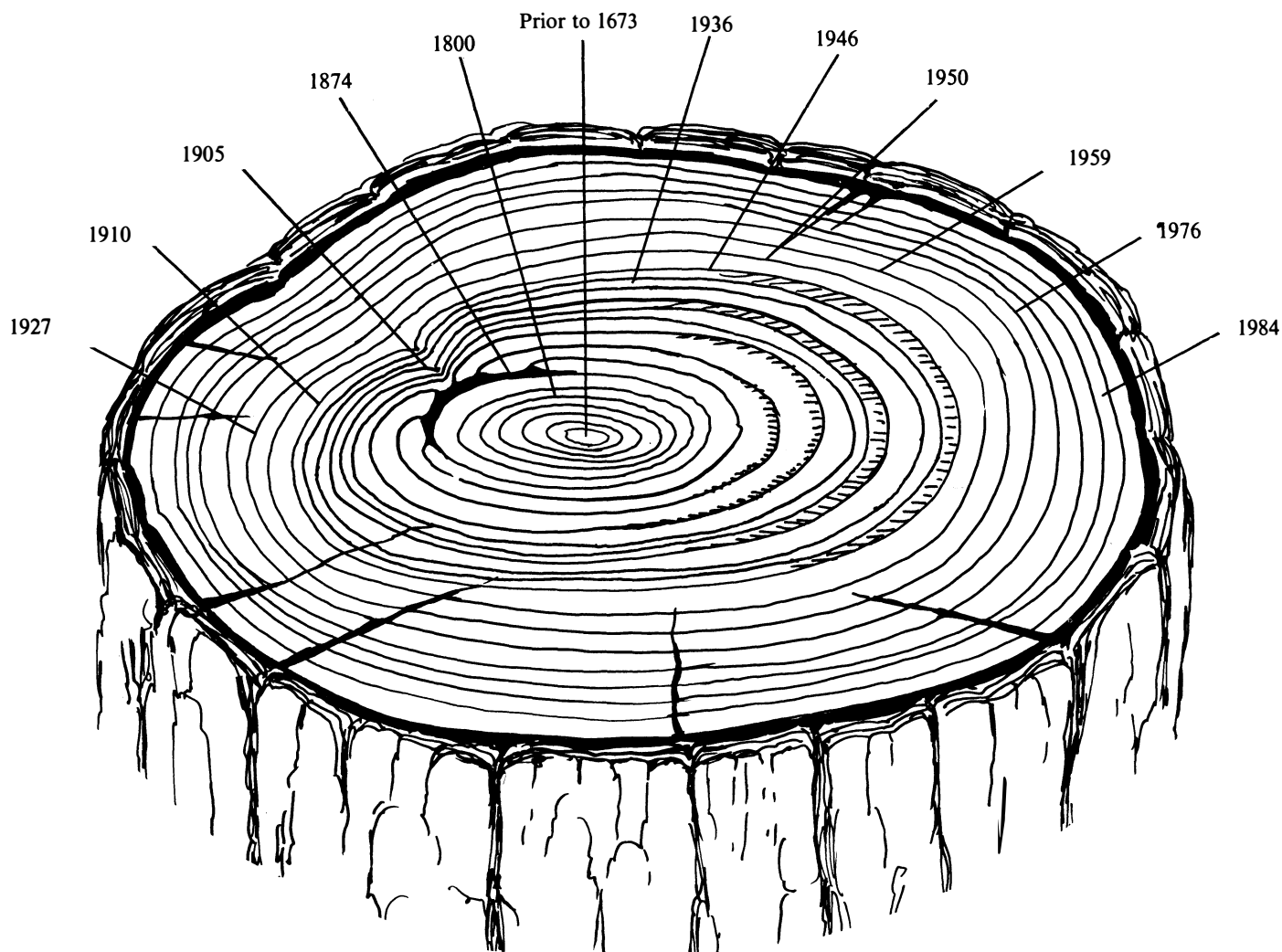
Crossword Clues—Down

DOWN

1. More areas are available for public use through _____ acquisition.
2. All the plants and animals in an environment make up its _____.
3. Missouri is one of the top ten raw _____ producing states.
4. The year 1935 brought a new _____ for Missouri wildlife management.
5. Wildlife depend for food and cover on plants, which depend on the _____.
7. Wildlife _____ is the art and science of making land produce wildlife.
8. Certain animal species that are not human or domesticated are known as _____.
9. Mortality is the _____ rate of a species.
10. The zone where different kinds of habitat come together is called _____.
11. The number of a given species that can survive in an area is its _____.
12. A track, trail, nest, or grazed area is a _____ an animal has used the area.
14. Relocating _____ in Florida, 1982, proved to be a poor management method.
16. A _____ species is one so scarce that it could become endangered easily.
17. Plan Ahead for Wildlife Survival is a management plan known as _____.
20. The channel to a beaver or muskrat den may be called its _____.
22. A judgment based on moral values rather than laws is a matter of _____.
23. The Conservation Commission _____ game seasons and limits in Missouri.
27. _____ furbearers provides income and recreation for 10,000 Missourians annually.
29. The Wildlife _____ Book of Missouri lists game laws and is updated each year.
30. Good habitat must include enough _____ for wildlife to eat for survival.
31. A bushy tailed mammal with black fur, the _____ protects itself with an odor.
35. Conservation means wise _____ of resources so we will always have them.
38. A record is kept of _____ harvested deer turned into a check station.
39. A device for capturing small birds for research is the mist _____.
41. A member of the cat family, the _____ lives in deep forest areas.
43. A water rodent with a long scaly tail, the _____ digs his home in a bank.
44. The _____, or female deer, usually produces twins each season.
46. The orderly replacement of one biotic community by another is _____.
47. Sportsmen Protecting Our Resources Together is a citizens' group called _____.
48. A mammal unpopular with stockmen is the _____ who thrives on rangelands.
49. An animal that catches and eats other animals is a _____.
51. Nearly 3½ million Missourians use wildlife in some way for _____.
56. Wildlife reach peak numbers during the summer _____.
58. Several _____ factors may determine an area's carrying capacity.
60. Over 50 species of Missouri mammals known as _____ cannot be legally hunted.
62. One should always ask _____ to use another person's land.
65. Wildlife which can be legally harvested are classified as _____.

- 67. A natural _____ is the available supply produced by nature.
- 68. Early _____ hunters often used any method to take the most animals for profit.
- 70. Severe _____ may reduce surplus wildlife more than any other factor.
- 73. The river _____, once endangered in Missouri, is being restored today.
- 74. Wildlife are of great economic _____ in Missouri.
- 75. The protection and shelter necessary for wildlife survival are termed _____.
- 77. There is no _____ in nature; everything has some value and use.
- 78. The highest birth _____ for wildlife usually comes in spring.
- 83. A sly, crafty, furbearing mammal, the _____ is often hunted with fanfare.
- 84. Plans for making nest and _____ boxes are available from the Conservation Department.

Read A Tree



Prior to 1673	Various Indian tribes established along Missouri's great rivers; 30 million acres of forest, 15 million acres of prairie, an abundance of wildlife.	1936	Proposition #4 passed, establishing a bipartisan conservation commission.
1800	Start of a 50-year period of settlement that will result in the extermination or driving out of the larger species of animals important to pioneer economy.	1946	State Forestry Act passed—reduced taxes on areas classified as forest croplands.
1874	Legislature passes the first state-wide game law and the "Act to Prevent the Destruction of Fish."	1950	Dingell-Johnson Law passed—aided in the expansion of fisheries research.
1905	First Walmsley Law passed—it authorized the sale of hunting and fishing licenses, and vested ownership of wildlife to the state.	1959	Deer season opened in all 114 counties. This was the first state-wide deer season since the turn of the century.
1910	First state game farm established.	1976	Amendment No. 1 establishing the 1/8 of one percent conservation sales tax passed.
1927	Bennett Spring Hatchery acquired for trout production.	1984	Amendment No. 2 establishing the 1/10 of one percent state parks and soil conservation tax passed.

Appendix 6

BEST Objectives Covered by this Instructional Unit

Reading/Language Arts

5. Use reference materials and sources to obtain information to solve personal problems.
12. Follow a set of written directions.
13. Interpret information presented in graphic or pictorial manner.
14. Speak and write effectively in different social and business situations and with persons of varied ages or backgrounds.
15. Write with complete sentences, acceptable sentence structure, acceptable grammatical construction, and correct spelling and punctuation.
16. Use reference materials and sources (including human sources) to obtain information to solve personal problems.
17. Recognize the main idea and specific details in an oral presentation.
21. Follow oral or written directions to complete a process.

Mathematics

8. Interpret information from charts, graphs, tables, maps, and scale drawings.

Government/Economics

4. Recognize that in the United States some limits are placed on individual rights and freedoms for the purpose of protecting the interests of society and the rights of other citizens.
5. Understand basic responsibilities of citizenship in our democratic system and how citizens may influence the government.

The History of the Conservation Movement in Missouri

Test Questions

1. List two reasons why Missouri was attractive to early explorers and settlers.
2. What impact did market hunting have on wildlife populations?
3. Describe the role that sportsmen's clubs played in the enactment of the first game laws.
4. What were the general provisions included in the Walmsley Act?
5. Describe three major achievements accomplished by the Conservation Commission between 1935 and 1940.

Define:

6. Market hunting:
7. Preservation:
8. Restoration:
9. Management:
10. Artificial propagation:
11. Extirpation:
12. Conservation:
13. The two primary objectives established by the Federation of Missouri Sportsmen were:
 - a.
 - b.
14. The five major areas of concern of the newly established Conservation Commission were:
 - a.
 - b.
 - c.
 - d.
 - e.

15. The three major areas of resource responsibility of the Missouri Department of Conservation are:
 - a.
 - b.
 - c.
16. The three goals of the Design for Conservation program were:
 - a.
 - b.
 - c.

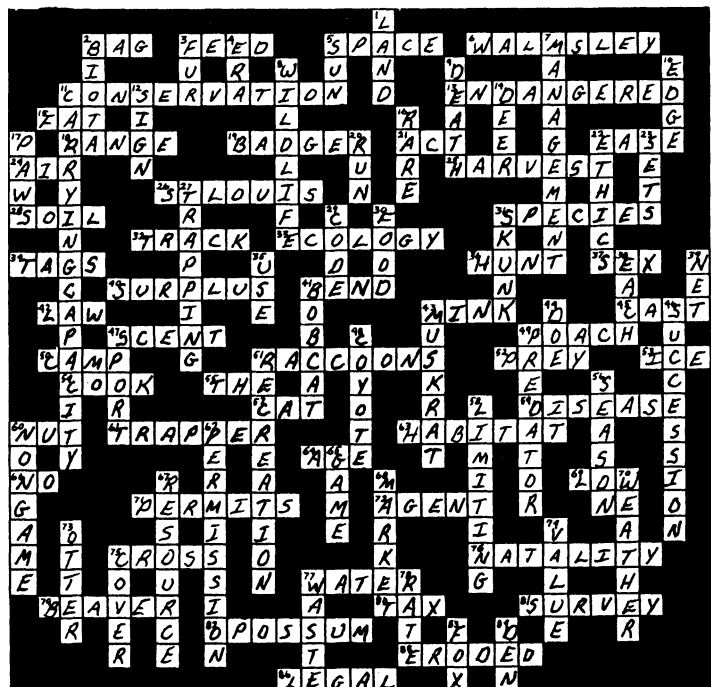
Appendix 8

The History of the Conservation Movement in Missouri

Answer Key

1. Answers will vary.
2. Answers will vary.
3. Market hunting resulted in the over harvesting of many wildlife species. It brought population numbers below that which could be replenished by reproduction.
4. The Walmsley Act authorized the sale of hunting and fishing licenses to the public, provided funds to pay the salaries and expenses of a staff of game wardens, established open and closed seasons for most game species and furbearers, provided protection for non-game birds, vested ownership of wildlife to the state, and contained provisions eliminating the sale and commercial transportation of game.
5. The three major achievements of the Conservation Commission between 1935 and 1940 were: the separation of the Conservation Commission from politics; the initiation of a modern-day wildfire protection program; the expansion of research.
6. Market hunting: The practice of killing game for profit.
7. Preservation: Saving a resource by using it very little or not at all.
8. Restoration: Reestablishing a wildlife population by live-trapping and redistributing the animals or restoring site conditions as they were before disturbance.
9. Management: Maintaining and keeping populations healthy.
10. Artificial propagation: The practice of pen rearing wildlife.
11. Extirpation: The complete extermination or removal of an animal from a region or state.
12. Conservation: The wise use of natural resources.
13. a. Separate fish and game from politics; b. Establish a Conservation Commission
14. a. Research; b. Propagation; c. Enforcement; d. Forestry; e. Public relations
15. a. Fish; b. Forests; c. Wildlife
16. a. Land acquisition programs; b. Expansion of public services; c. Increased research and development

Wildlife Management Crossword Puzzle



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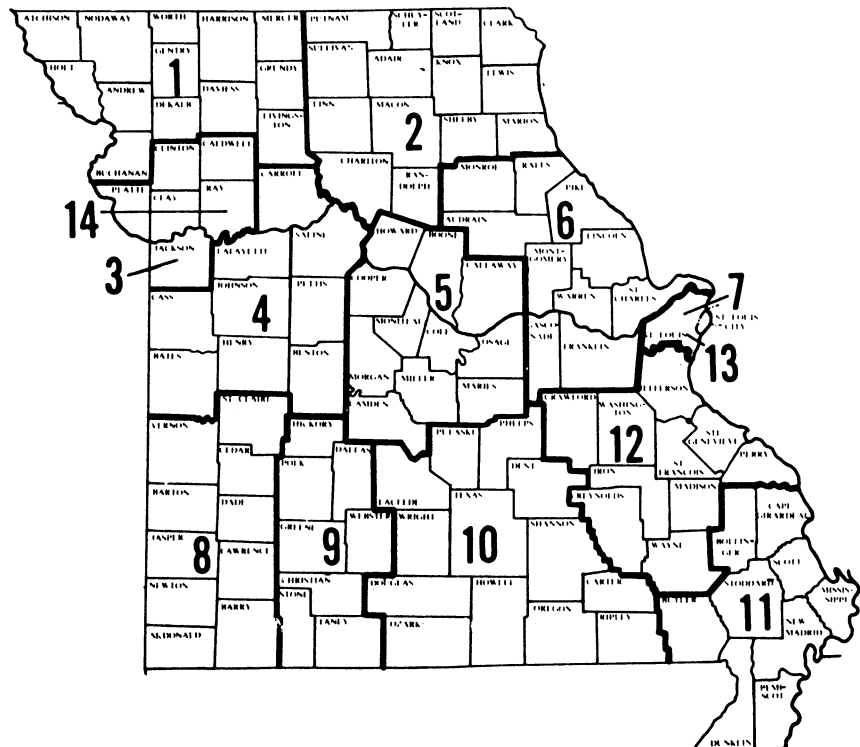
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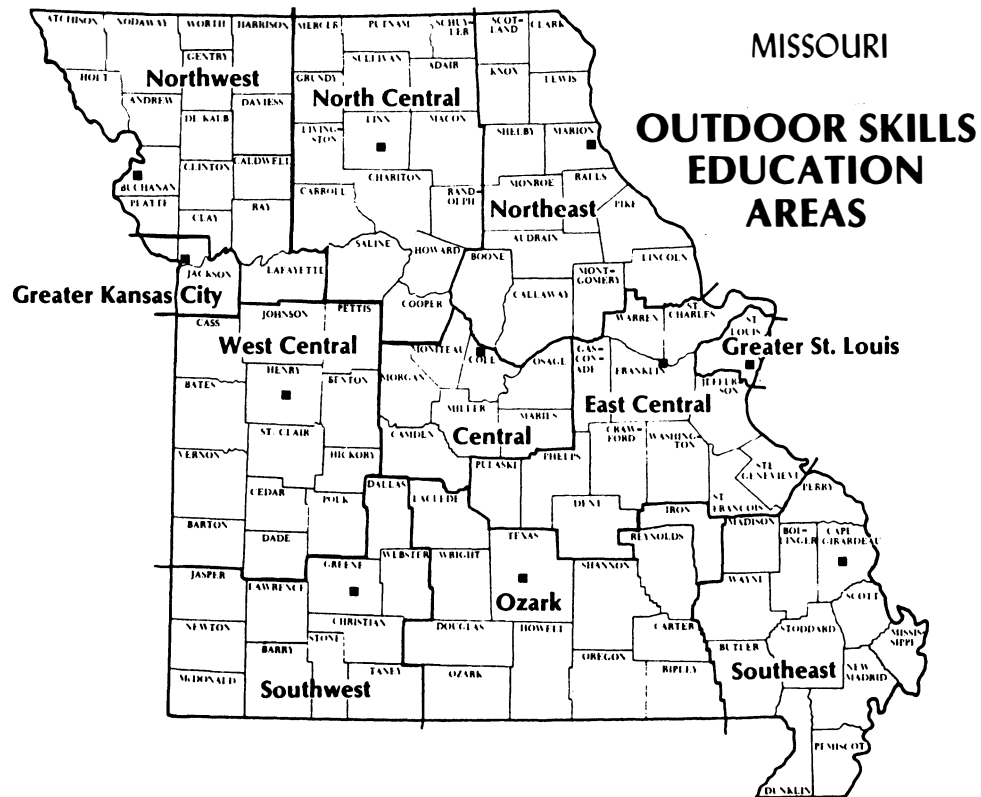
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Conservation Education Consultants are available to provide conservation education assistance and offer courses and workshops in conservation.



Outdoor skills education specialists will assist you in obtaining materials and scheduling equipment and films that are available from the Department of Conservation. They also offer workshops to provide training in outdoor skills education. For the name and address of the outdoor skills education specialist serving your area, contact:

Missouri Department of Conservation
Outdoor Skills Education Unit
P.O. Box 180
Jefferson City, MO 65102



Notes

